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ABSTRACT

The bibliography provides a chronological survey of the development, growth, and application of the concept of Functional Job Analysis (FJA) which provides for the formulation of qualifications of workers and the requirements of jobs in the same terms so that the one can be equated with measures of the other. An introductory section discusses FJA, pointing out that it conceptualizes experience in terms of human functioning and growth, uses the language of experience to bring into focus the definition of work, defines the unit of work in a way that results in a stable element of design, and links together in a single interacting system worker, work, and work organization. Entries are listed for the years 1951, 1953, 1955-65, and 1967-75 with items arranged alphabetically by author within each year grouping. The early papers are mostly concerned with the theoretical formulations and the research that implemented the development of the occupational classification system used by the U.S. Employment Service for the Dictionary of Occupational Titles. These are followed by the applications of FJA to the study of the impact of automation on job structure. More recent papers describe the application of FJA to various practical manpower needs. (Author/MS)

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FUNCTIONAL JOB ANALYSIS

An Annotated Bibliography

With the Compliments of the Institute

By

SIDNEY A. FINE
ANN M. HOLT
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May 1975

The W. E. Upjohn Institute for Employment Research

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THE W. E. UPJOHN INSTITUTE

FOR EMPLOYMENT RESEARCH

THE INSTITUTE, a nonprofit research organization, was established on July 1, 1945. It is an activity of the W. E. Upjohn Unemployment Trustee Corporation, which was formed in 1932 to administer a fund set aside by the late Dr. W. E. Upjohn for the purpose of carrying on "research into the causes and effects of unemployment and measures for the alleviation of unemployment."

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Sidney A. Fine
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Washington, D.C.
April 1975

INTRODUCTION

Because of the steady flow of inquiries about Functional Job Analysis from researchers and persons engaged in manpower planning and utilization, both in private industry and in public service institutions, the Institute is publishing this annotated bibliography. The inquiries are addressed to the origins of Functional Job Analysis (FJA), how it is being used, and its accessibility to those who wish to use it. Much of the interest stems from the involvement of the compilers with some of the acute manpower issues of the day, such as equal employment opportunity, affirmative action plans, new careers, mid-career occupational planning, and establishing task-based, "relevant" selection techniques. As it happens, Functional Job Analysis has been and is increasingly involved with many of these issues and thus this bibliography is both practical for the contemporary scene and useful to researchers in the field.

Historically, 1975 happens to mark 25 years since research began on Functional Job Analysis. The research design reflected some 15 years of experience and discussion by a number of people, including Sidney A. Fine, who had struggled with the 1933 mandate of the Wagner-Peyser Act to classify jobs so that workers could be placed in work suitable to their potential.

While the Act realized a dream of the vocational guidance movement for official government support of the concept of "matching men and jobs," the tools and methods for effecting this concept were few and imperfect. What this concept needed for the matching to take place was the formulation of qualifications of workers and the requirements of jobs in the same terms so that the measures of the one could be equated with the measures of the other. During the years 1933-1948, the terms and concepts of the two sides of the problem were separate and distinct, each in effect reflecting separate disciplines and categories. The dichotomy was reflected within the U.S. Employment Service, charged with the implementation of the Wagner-Peyser Act. Qualifications categories were represented by aptitude and interest dimensions as developed by testing and factor analysis in psychological research. Requirements categories were represented by job specifications, expressed in the descriptive language of action verbs applied to work procedures, tools, equipment and work aids, and outcomes. The two could be brought together only through correlating the specifications and individual test performance against a criterion of satisfactory performance. Unfortunately, these criteria, typically supervisory ratings, were quite inadequate. Outputs, another criterion, were often contaminated by factors unrelated to what the tests measured.

For this reason and others associated with the sampling and standardization process, the validity of selection tests has been open to question. Functional formulations which describe behavior in the work situation, and which also describe behavior of the individual, eliminate this problem. In effect, the work situation is the test, and the individual can be evaluated by direct assessment. Functional concepts permit the formulation of generalizable work situations on the basis of which direct, rather than indirect, assessment of suitability can occur.

Functional Job Analysis, over the past 25 years, has gone through two rather distinct phases. From 1950 to 1965, it was in its research and development phase, almost entirely in the U.S. Employment Service, where it became the basis of the system for classifying work (and thus work experience) in the third edition (1965) of the *Dictionary of Occupational Titles*. During this period also it was used as a research tool to throw light on the impact of automation on job design.

What began as a quest for a more effective tool for classifying jobs, the jobs being considered the fundamental work units, emerged as a method for task analysis, the tasks being now considered the more basic work units. With the focus on the definition of a task as consisting of a behavior and an outcome, the overall gestalt in which the task occurred became more clearly defined. Understanding of the behavior led back beyond the worker's instrumental functioning to his Adaptive Skills, his uniqueness as a person. Similarly, understanding of the outcome led back to the objectives, goals, purposes, needs, and values of each specific work organization. In effect, the task unfolded as a minisystem and the fundamental unit for A Systems Approach to Manpower Planning and Job Design.

From 1965 until the present (1975), under the aegis of the W. E. Upjohn Institute for Employment Research, FJA has slowly become a widely used instrument in manpower planning and utilization. Initially, the Institute sought to meet the need of the proliferating manpower programs of the mid- and late sixties with two training programs, A Systems Approach to Task Analysis and Job Design, and A Systems Approach to Organizational Analysis for Manpower Planning. They were designed for the managers of manpower programs and were administered all over the country. More recently the Institute supported the development of a multimedia Functional Job Analysis training course to facilitate the dissemination of material and to reduce the cost of the training. Over 1,500 persons have been trained, including health, welfare, and manpower agency representatives in 35 states. Some 10 of these states have ongoing programs utilizing FJA to some degree in their welfare and vocational rehabilitation operations. At the present time FJA is the major method being used to study the manpower of the criminal justice system (police, courts, corrections) in the United States, and corrections manpower in Canada. In Canada FJA is also being used to study generic skill requirements of the most common occupations. A study currently supported by the U.S. Department of Labor is using FJA to develop valid, work-relevant, criterion-referenced tests. Private industry too has begun to use FJA for various practical operations, including the development of an integrated personnel placement system.

Why the increasing interest in and use of FJA? One possibility is that the issues and problems of today call for new vantage points from which they can be viewed and a new language to ask the relevant questions. Such problems as communication, mass transportation, full employment, health care, and energy have their roots in human need and social failures as much as in gaps in the knowledge chains of traditional disciplines. The questions they give rise to are in terms of what makes things work to satisfy human needs and values rather than what more we need to know to understand the essences of things. We live in a utilitarian, operational, functional age

that cries out for accountability, for putting to practical use what we already know. There is insistence that a problem be dealt with from a multifaceted point of view and that proposed solutions be examined in terms of their consequences--costs as well as benefits. Functional Job Analysis makes a contribution in this context. It conceptualizes experience in terms expressive of human functioning and growth. It uses the language of experience to bring into focus the definition of work. It defines the unit of work in a way that results in a stable element of design. And finally, it links together in a single interacting system Worker, Work, and Work Organization.

The bibliography provides a chronological survey of the development, growth, and application of the functional concept. Thus the early papers are mostly concerned with the theoretical formulations and the research that implemented the development of the occupational classification system. These are followed by the applications of FJA to the study of the impact of automation on job structure. More recent papers describe the application of FJA to various practical manpower needs.

The success of the Upjohn Institute in disseminating FJA methodology, through its publications, makes it unlikely that this bibliography is complete. Increasingly, we learn indirectly of the use of FJA by reading an article in the professional literature or by hearing it mentioned at professional meetings. The use of the National Task Bank (U.S. Department of Health, Education, and Welfare, 1973) by training and graduate institutions and by welfare agencies has been another vehicle for the dissemination and use of FJA methodology. Particularly encouraging has been the fact that FJA is not static; even at this moment it is proving to be adaptable to the needs of its users. New and simple methods of data gathering, new applications to personnel operations, and more effective ways of communication in manpower management emerge with each passing year. It would be a delightful and desirable happening if users not mentioned in this bibliography would write to the Institute of their experiences for possible inclusion in a later, updated annotated bibliography.

ANNOTATED BIBLIOGRAPHY

1951

Fine, S. A. "A Pilot Study to Develop a Functional Classification Structure of Occupations." Paper presented at American Psychological Association Convention, Chicago, Illinois, September 1951.

This paper describes the research design for the development of a new occupational classification structure to replace the one used in the *Dictionary of Occupational Titles*, revised edition, 1949.

1953

Studdiford, W. S. "A New Occupational Classification Structure," *Employment Security Review* 20 (1953): 9.

This article describes the research approach taken by the U.S. Employment Service to develop a revised occupational classification system for the *Dictionary of Occupational Titles*.

1955

Fine, S. A. "Functional Job Analysis," *Personnel Administration and Industrial Relations*, Spring 1955.

This article describes the research carried out by the U.S. Employment Service to establish a Functional Job Analysis technique as a structured and formal device to provide more reliable and effective job information. The elements of the technique, including the classifications of Worker Functions; Methods Groups; and Materials, Products, Subject Matter, and Services are described in some detail. Seven rules for applying the technique and reliability and validity data for 100 jobs and four raters are presented.

-----. "A Structure of Worker Functions," *Personnel and Guidance Journal*, October 1955.

This article describes the development of Things, Data, and People functional hierarchies and their reliability in job descriptions.

-----. "What Is Occupational Information?" *Personnel and Guidance Journal*, May 1955.

This article discusses the use of Functional Job Analysis (FJA) dimensions (Things, Data, People) and their translation into human traits (physical, mental, and interpersonal) to establish criteria for occupational information for counseling purposes.

Trattner, M., S. A. Fine, and J. F. Kubis. "A Comparison of Worker Requirement Ratings Made by Reading Job Descriptions and by Direct Job Observation," *Personnel Psychology* 8 (1955): 2.

Two groups of eight occupational analysts individually rated 10 jobs for aptitudes as to the degree required and those primary for job success. One group rated from written job descriptions; the other, from observations of the jobs. Both used identical rating instructions. There was a high degree of correspondence between the mean ratings made by the two groups, suggesting independence from the rating conditions. The ratings were also quite self-consistent and consistent with objective test data. It is hypothesized that concepts play a mediating role in achieving the positive results.

1956

Fine, S. A. "Matching Men and Jobs--A New Look," *Labor Market and Employment Security*, May 1956.

Possible applications of a functional occupational classification system to deal with labor shortage and surplus problems are described.

Newman, J., and S. A. Fine. "A Note on Thorndike's Preference Blank for Psychologists," *The American Psychologist*, July 1956.

This article compares the activity preference clusters developed statistically from questionnaires by Thorndike with those developed from the application of Functional Job Analysis techniques. There is a close parallel between the results determined at vastly different costs.

1957

Fine, S. A. "A Re-examination of Transferability of Skills, I and II," *Monthly Labor Review*, July-August 1957.

Part I explores five assumptions concerning the transferability of skills and demonstrates the existence of considerable misunderstanding of the concept, particularly in the light of a great dearth of evidence and the complexity of the variables involved. Psychological and economic studies are cited.

Part II describes the application of FJA techniques to the establishment of a framework for research. It demonstrates the application of the research rationale to seven different types of manpower problems, including displacement of mine workers.

----. "Temperament and Interest Requirements of Jobs," *Personnel Administration*, March-April 1957.

The 12 temperament factors and interest factors used in the U.S. Employment Service occupational classification research and the distribution of estimated requirements in 4,000 jobs are described. The article also demonstrates the application of the data to counseling in the mechanical and artistic fields.

Fine, S. A. "U.S.E.S. Occupational Classification and Minnesota Occupational Rating Scales," *Journal of Counseling Psychology* 4 (1957): 3.

This study sought to establish the correspondence between Minnesota Occupational Classification Rating Scales (MORS) and the U.S. Employment Service Functional Job Analysis and trait patterns for vocational counseling purposes. A 10 percent sample (37) of the MORS jobs was used as the basis for the study. Each of four raters applied the FJA rating approach independently. Findings indicated that "the relatively gross data on various Trait and Work Performed components do have discriminatory value." Each of the two groups of data provides a basis for forming judgments about job requirements consistent with those arrived at by MORS. Trait and Work Performed data used in conjunction proved best for formulating requirements consistent with MORS results.

Fine, S. A., and C. A. Heinz. "Estimates of Worker Trait Requirements," *Personnel and Guidance Journal*, November 1957.

This article presents the reliability and validity data on the estimates of worker trait requirements for 4,000 jobs as defined in the *Dictionary of Occupational Titles*. It also describes the development of the document as part of the occupational classification research program of the U.S. Employment Service.

McCormick, E. J., R. H. Finn, and C. D. Scheips. "Patterns of Job Requirements," *Journal of Applied Psychology* 41 (1957): 6.

A factor analysis of the 44 variables involved in the functional occupational classification project (FOCP) of the U.S. Employment Service is described. Seven job-requirement factors emerged. A classification of jobs into patterns of job requirements (in terms of factor score level) revealed a strong concentration of jobs in a limited number of various possible patterns.

Newman, J., and S. A. Fine. "Validity of Job Descriptions for Physical Requirements and Work Condition Information," *Personnel Psychology* 10 (1957): 2.

This article describes the physical capacities and working condition factors used in U.S. Employment Service occupational classification research and their application to estimating requirements in a sample of 560 jobs in 20 industries. Two independent statistical treatments were carried out. The results of the correlations indicated that ratings made by trained analysts on the basis of occupational information may be used as confidently as ratings made on the basis of observation.

1958

Fine, S. A. "Matching Job Requirements and Worker Qualifications," *Personnel*, May-June 1958.

This article discusses the problem of matching job requirements and worker qualifications in the employment process and the use of estimated

patterns of trait requirements, prepared by the U.S. Department of Labor as guidelines or reference points to facilitate the process.

Fine, S. A., and C. A. Heinz. "The Functional Occupational Classification Structure," *Personnel and Guidance Journal*, November 1958.

This article describes the basic ingredients of a proposed new occupational structure based on functional analysis of jobs. The separate coding of Worker Functions, Work Fields and Materials, Products, Subject Matter, and Services is demonstrated. Examples and sample formats are also included.

1959

Boling, J., and S. A. Fine. "A Study of Cues Used by Raters in the Rating of Temperament Requirements," *Journal of Applied Psychology* 43 (1959): 2.

The development and definition of the 12 temperament traits used to rate 4,000 jobs in the course of U.S. Employment Service occupational classification research are discussed. The reliability of raters in using verbal cues in job descriptions to estimate temperament requirements is also treated.

1960

Fine, S. A. "Functional Job Analysis Self-Reports." 1960. Unpublished instruments available from the author.

These reports are self-administered data-gathering instruments for selected professional, administrative, and office occupations, including mechanical and electronic engineers, mathematicians, programmers, technical editorial writers, and related workers.

----. "Invention or Discovery: Alternative Approaches to Occupational Information," *Rehabilitation Counseling Bulletin*, September 1960.

In commenting on a paper by Professor Anne Roe, this report describes the application of FJA in defining the complex of situations in industry designed to satisfy human needs, and its relation to Maslow's need hierarchy. A chart is presented to show situational need relationships. The FJA approach is discussed as a means for the rehabilitation counselor to "invent" solutions to rehabilitation problems rather than rely on the matching solution implicit in "discovery."

----. "Structured FJA Interview." 1960. Unpublished manual available from the author.

This manual for job analysts is designed to obtain the basic information needed for developing a self-report of a particular occupation.

Mosel, J. N., S. A. Fine, and J. Boling. "The Scalability of Estimated Worker Requirements," *Journal of Applied Psychology* 44 (1960): 156-160.

To determine the scalability (in the Guttman sense) of 33 estimated worker requirements, seven analysts rated 50 jobs on a "go, no-go" basis as to whether the requirements were involved. The resulting scalograms were permuted to maximize the cumulative property, and the Guttman and Jackson indexes of reproducibility were computed for each requirement.

Almost all of the 10 interest requirements proved to have acceptable scalabilities. Over half of the 13 personality requirements were scalable, while only 3 of the 10 aptitude requirements proved scalable.

Walther, R. H. "The Functional Occupational Classification Project: A Critical Appraisal," *Personnel Guidance Journal* 38 (1960): 698-707.

This article is a critical appraisal of the FJA approach to occupational classification. Although FJA is commended as a step forward, it is criticized for ignoring the meaning of work and behavioral styles of individuals as vital factors in vocational adjustment.

1961

Fine, S. A. "Manual for Supervisors and Performance Appraisal Instrument." 1961. Unpublished manual available from Applied Physics Laboratory, The Johns Hopkins University, Silver Spring, Maryland.

This manual is a performance appraisal instrument providing rating scales for Things, Data, People, and Core (adaptive) behavior applicable to a wide range of occupations. It is designed to be integrated with FJA as a reference base.

1962

-----. "Functional Job Analysis as a Method of Indirect Validation: A Study in Synthetic Validity." Unpublished doctoral dissertation, The George Washington University, June 1962.

FJA was used (1) to estimate the amount of nine aptitudes required for average performance success in each of 85 jobs, and (2) to predict three, four, or five aptitudes that would be significant for selection; that is, those which would be selected as norm aptitudes by an empirical validation process. Test results were available for all jobs but were unknown to two independent raters.

In general, the study provides evidence of the usefulness of the FJA rationale as a means of predicting empirical validity. It suggests that the predictions of FJA be given as much consideration as statistical criteria in arriving at final norms.

Fine, S. A., and R. A. Dickmann. "Satisfaction and Productivity." Paper presented at American Psychological Association Convention, St. Louis, Missouri, September 1962.

This paper describes the development of a satisfaction questionnaire related to human needs on the basis of FJA concepts. It also describes application of the questionnaire in a research and development laboratory with senior, associate, and assistant engineers; engineering support staff, and clerical personnel to test two hypotheses growing out of Herzberg's, Mausner's, and Snyderman's theory of the role of satisfiers and dissatisfiers in productivity. In the main, their theory appears to be supported, while little significant support was found for a modification of the theory.

1963

Eckerson, A. B. "The New *Dictionary of Occupational Titles*," *Employment Security Review*, February 1963.

This article describes the 1965 third edition of the *Dictionary of Occupational Titles* and how the coding system reflects functional and trait concepts. The two halves of the code number provide the two basic dimensions of the classification structure: (a) three digits to reflect work field, material, product, subject matter, and service; (b) three digits to reflect worker functions and worker trait requirements.

Fine, S. A. "Functional Approach to a Broad Scale Map of Worker Behavior." Paper presented at American Psychological Association Convention, Philadelphia, Pennsylvania, September 1963.

This paper was presented as part of a symposium concerned with the fundamental need posed by Dr. C. W. Bray for a broad-scale map showing how to intermesh human capabilities with system performance requirements. The paper demonstrates the use of worker functions as a basis for research into developing such a map. An appendix provides a conceptual model of a functional approach to a behavioral and task taxonomy as applied to manifest skills. The taxonomic concepts deriving from behavioral and industrial perspectives, as well as worker functions, are defined.

----. *Job Analysis of Physical Therapists to Develop Curriculum Material for an Aide Training Program.* McLean, Virginia: Human Sciences Research, Inc., November 1963. [Final Report No. HSR-RP-63/19, prepared for the Michigan Department of Health.]

This study demonstrates the use of FJA technique (using the FJA self-report) in conjunction with Critical Incident Technique, behavioral styles self-report, and satisfaction questionnaire in developing comprehensive information about jobs and incumbents for curriculum purposes.

The FJA and behavioral styles self-reports provide the analytical dimensions of job and worker pertinent to each other. The Critical Incident Technique and satisfaction questionnaire provide information about the dynamic interaction of worker and overall job requirements as well as information for a performance criterion. With this information as a basis, a possible aide training program is derived.

Levin, L. S., and A. M. Martin. "Section I, The Development of Functional Criterion Analysis for Studies of Manpower Problems: A Feasibility Study in the Biosciences," in *Study of Manpower Needs in the Basic Health Sciences*, Phase II, Final Report. Washington, D.C.: Federation of American Societies for Experimental Biology, 1963.

This report presents the melding of the Critical Incident Technique (CIT) and Functional Job Analysis (FJA) into a "broader and more technically refined approach"--Functional Criterion Analysis (FCA). The procedures used for the feasibility study are described. Several examples from the self-report that was used are included.

Mosel, J. N. "The Domain of Worker Functions as a Partially-Ordered Set." Paper presented at the annual meeting of the Eastern Psychological Association in Philadelphia, Pennsylvania, 1963.

A random sample of 500 jobs from the *Dictionary of Occupational Titles* was analyzed with respect to 27 worker functions (which included S. A. Fine's final list of worker functions) to determine whether the worker functions might form a partial ordering under the relation of set inclusion. Set inclusion implies that with certain limits the set of jobs characterized by one worker function would be included within the set of jobs characterized by another worker function. Methods for analyzing the matrix of worker-function overlaps and inclusions were developed. Results showed that 20 of the 27 worker functions formed a complex partially ordered set which could be displayed as a graph-theoretical tree with four levels. Thus, to a large extent, the domain of worker functions (and, hence, the domain of jobs) forms a topological hierarchy in which each worker function includes and/or is included in some other worker function.

1964

Fine, S. A. *The Nature of Automated Jobs and Their Educational and Training Requirements*. McLean, Virginia: Human Sciences Research, Inc., June 1964. [Final Report No. HSR-RR-64/6-Ae, prepared for the Office of Manpower, Automation, and Training, U.S. Department of Labor, under Contract No. OAM-3-63.]

FJA was used to measure change in educational and training requirements for jobs experiencing the impact of automation. Varying functional patterns were equated with varying educational and training levels and were validated by on-the-spot interviews with management and workers in three industries.

Findings for production jobs in three industries did not support popular generalities concerning either the raising or lowering of skill. In fact, different types of "automated" equipment (three types were defined) had differential effects on skill. Workers' attitudes toward automation were also determined and described.

Fine, S. A. "The Use of Functional Job Analysis (FJA) to Predict Requirement Changes as a Result of Automation." Paper presented at American Psychological Association Convention, Los Angeles, California, September 1964.

This paper describes and demonstrates the measurement potential of FJA technique for the purpose of anticipating changes in job requirements upon the introduction of automated equipment. The impact of three types of automated equipment upon human mental and physical requirements is also described.

1965

Martin, A. M. "Job Responsibilities of Media Personnel," in *A Study of Regional Instructional Media Resources, Phase I--Manpower.* Pittsburgh, Pennsylvania: University of Pittsburgh, 1965.

This study combined the techniques of Functional Job Analysis (FJA) and Critical Incident Technique (CIT) to provide: (1) some quantitative indicators (FJA variables, interest variables, and job incentive variables) for grouping media jobs into four major areas; and (2) some qualitative dimensions (CIT categories) for classifying educational implications of the different performance categories derived. A computer-based multivariate statistical analyzer system was adapted for finding the relevant occupational groups and relevant variables.

Martin, A. M., and R. Scott. *Occupational Group Differences in Job Incentive Dimensions Among Academic and Industrial Personnel.* Pittsburgh, Pennsylvania: University of Pittsburgh, 1965.

A factor analysis of job satisfaction items (generated by FJA technique and rated by 430 academic and 600 industrial personnel) is described. Three factors were moderately correlated. Scores on the factors were computed for individual subjects, and significant differences in response were found among occupational levels and between academic and industrial personnel. Females were found to be more homogeneous in regard to factor scores than males.

Martin, A. M., and C. W. Stone. *A Study of Regional Instructional Media Resources: Phase I--Manpower.* Pittsburgh, Pennsylvania: University of Pittsburgh, 1965.

This study of instructional media manpower needs combines the techniques of Functional Job Analysis (FJA) and Critical Incident Technique (CIT). The findings establish a media job classification system for media services; suggest dimensions for future studies of manpower requirements for media services; spell out procedures for other similar studies; and suggest data which could be gathered to contribute toward the development of educational objectives, curricula, and training materials for persons working in any of the media field specialties.

U.S. Department of Labor, Manpower Administration. *Dictionary of Occupational Titles*, Vols. I and II, third edition. Washington: Government Printing Office, 1965.

This publication is a standard source of occupational information in the broad area of manpower and related fields. The classification structure used in the third edition incorporates Functional Job Analysis concepts. Volume I contains names and definitions of various occupations in the economy, arranged alphabetically by job titles. Volume II, divided into 12 sections, serves as a method of grouping jobs having the same basic occupational, industrial, and worker characteristics to help the user discern relationships among occupations; it is a standard approach to classifying the abilities, vocational experiences, and potential of workers.

1967

Fine, S. A. *Guidelines for the Design of New Careers*. Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, September 1967.

This monograph defines and discusses technical and strategic guidelines to be applied to career design once employer and community commitment have been made. The technical guidelines relate to job design and include: titling of the job; selection procedure; structuring and specification of the tasks; supervision and performance evaluation; pay and fringe benefits; and training. Strategic guidelines relate to the politics of introducing career opportunities and include: the beneficiaries of new careers; the target work field selected for which new careers will be designed; and the approaches to be used in defining and winning acceptance for new careers.

U.S. Department of Labor, Manpower Administration, U.S. Employment Service. *Counselor's Desk Aid: Eighteen Basic Vocational Directions, Summary Information*. Washington: Government Printing Office, 1967.

This *Desk Aid* is to be used in conjunction with the *Counselor's Handbook*. The *Desk Aid* materials are based primarily on the *Dictionary of Occupational Titles (DOT)* classification system, developed by the Functional Occupational Classification Project. The basic vocational directions defined in this *Desk Aid* are public service, the sciences, engineering and related, business relations, managerial, the arts, clerical, public contact and selling, service, primary outdoor, processing, machine work, bench work, structural work, mechanical and electrical work, graphic arts, mining, and elemental--all with definitions and appendixed codes from the *DOT*.

U.S. Department of Labor, Manpower Administration, U.S. Employment Service. *Counselor's Handbook*. Washington: Government Printing Office, 1967.

The *Handbook* consists of two parts. Part I includes interviewing guides in individual appraisal; it is chiefly designed to help the counselee learn about himself. Part II contains a guide for relating counselee

appraisal patterns to fields of work. It organizes the world of work according to 18 basic vocational directions.

1968

Fine, S. A. *The 1965 Third Edition of the Dictionary of Occupational Titles--Content, Contrasts, and Critique.* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, December 1968.

Three aspects of the third edition of the *Dictionary of Occupational Titles* are considered or discussed in this monograph: (1) content--what information is included and how it is organized; (2) contrasts--how the third edition differs from previous editions and the implications of these changes; and (3) critique--identification of some of its weaknesses and six specific suggestions for improvements.

----. *Use of the Dictionary of Occupational Titles To Estimate Educational Investment.* Reprint from *The Journal of Human Resources,* Vol. III, No. 3 (Summer 1968). Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, August 1968.

The article explains how the data in "Selected Characteristics of Occupations (Physical Demands, Working Conditions, and Training Time), 1966--A Supplement to the Dictionary of Occupational Titles," third edition, may be used to estimate educational and training requirements. It discusses the need for distinguishing among functional, educational, and hiring requirements. The article also describes the structure of definitions in the *Dictionary,* the language controls which these definitions provide, and how the definitions integrate with the estimates of functional, educational, and training requirements.

1969

----. *Guidelines for the Employment of the Culturally Disadvantaged.* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, June 1969.

The paper discusses some of the reasons for lack of success in employment of the culturally disadvantaged and distills some of the experiences of industry and government into 12 guidelines which cover: preparing the organization; hiring; placement; training and support; and mobility. Each guideline is illustrated with actual examples from industry practice.

U.S. Department of Housing and Urban Development, Urban Management Assistance Administration, Community Development Training Division. *An Identification and Analysis of Selected Sub-Professional Occupations.* April 1969. [Performed by A. L. Nellum and Associates under Contract No. H-1017.]

Functional Job Analysis was used to study selective job units in seven agencies in the District of Columbia in order to identify subprofessional

occupations for which incumbent staff could be trained in state and local government agencies. The data strongly suggest that any creation of new jobs first requires a holistic view of the agency structure, and that, by rearranging tasks from simple to complex, a reassessment of job positions can be accomplished, and the possibilities of horizontal and vertical advancement of workers within the system can be increased.

Wiley, W. W., and S. A. Fine. *A Systems Approach to New Careers: Two Papers.* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, November 1969.

Wiley's paper, "Six Steps to New Careers," provides six questions which can be used as criteria to determine if the staffing pattern in an agency constitutes real jobs and careers for poor people; it also outlines six steps in designing jobs and careers which meet these criteria. Appended to the paper are the Scales of Worker Functions and Scales of General Educational Development. Fine's paper, "A Systems Approach to Manpower Development in Human Services," describes the major features of a systems approach: system purpose; system environment or constraints; system resources; components of the system; and maintenance of the system. It also discusses how the six criteria defined in Wiley's paper satisfy the needs of a system and help achieve the system purpose.

1970

Dickmann, R. A. *Handbook for Supporting Staff Job Analysis and Evaluation.* Silver Spring, Maryland: The Johns Hopkins University, Applied Physics Laboratory, July 1970.

This handbook, designed to serve as a guide in determining proper job analysis classifications for the supporting staff personnel at The Johns Hopkins University Applied Physics Laboratory, explains Functional Job Analysis and job evaluation functions. It includes 85 classification profiles with job titles, job descriptions, job qualifications, and job specifications (including supervision received and responsibilities); a listing of FJA analyses and comparable jobs; and a chart of career ladders.

Fine, S. A. "Older Workers in Pursuit of New Careers," Chapter 5 in Harold L. Sheppard, ed., *Toward an Industrial Gerontology.* Cambridge, Massachusetts: Schenkman Publishing Co., 1970.

This paper stresses the importance of the experience asset that older workers may have as a basis for their pursuit of new careers. It examines the characteristics of careers; the skill potential of older workers for careers; and the new kinds of activities that may be developing as career opportunities for older workers. The discussion is based on the three kinds of skills (Functional, Specific Content, and Adaptive) and on the FJA Scales.

U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, Community Services Administration, Office of Child Develop-

ment. *Differential Use of Staff in Family and Child Welfare Services, with Particular Reference to Subprofessional Staff: A Guide.* Washington: 1970.

This guide was developed for state and local agency personnel who carry responsibilities for administration, program planning, and training and manpower development in family and child welfare services. It is intended to be a frame of reference in planning for the differential use of staff in providing services. Systems concepts are used to identify purposes, goals, and objectives of selected welfare service operations, thereby indicating the work that needs to be done. Functional Job Analysis is described. Protective services for children and neighborhood outreach programs are included.

U.S. Department of Labor, Manpower Administration. *A Handbook for Job Restructuring.* Washington: Government Printing Office, 1970.

This handbook was developed to provide a basic guide for use in restructuring job systems so that available manpower resources might be utilized more efficiently. The methodology presented is a refinement of job analysis techniques of Functional Occupational Classification Research developed by the U.S. Employment Service during the development of the *Dictionary of Occupational Titles,* third edition, 1965. It involves a detailed analysis of each job in terms of (1) the specific tasks performed by the worker; (2) the functioning of the worker in relation to data, people, and things; (3) the minimum general educational development required for satisfactory performance; (4) an estimation of the aptitudes required for satisfactory job performance; and (5) other significant worker trait requirements, such as physical demands, temperaments, and interests.

1971

Fine, S. A., M. D. Batten, R. L. Miller, W. W. Wiley, and J. A. Woodward. *Functional Job Analysis Task Bank Manual.* Washington, D.C. office: W. E. Upjohn Institute for Employment Research, August 1971.

This *Manual* describes the Upjohn Institute's *Task Bank of Selected Tasks from the Social Welfare Field* and its uses. It tells what kind of information is included on the Task Bank cards, how the information is code notched for quick sorting and retrieval, and what manpower problems the Task Bank helps to solve.

The *Manual* is not intended to teach readers how to generate the data contained on a Task Bank card or how to formulate and analyze tasks using Functional Job Analysis. It is intended for use by persons trained and competent in FJA.

Fine, S. A., and W. W. Wiley. *An Introduction to Functional Job Analysis: A Scaling of Selected Tasks From the Social Welfare Field.* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, September 1971.

This publication describes the concepts and methodology of Functional Job Analysis (FJA) with specific reference to the social welfare field. It includes the seven scales of FJA and illustrative benchmark tasks. A brief historical review of the development and application of FJA appears in an appendix. This is the basic text used in the Institute's FJA multimedia training course (see Fine and Bernotavicz, November 1973).

Hyer, A. L., F. D. Bernotavicz, K. Silber, C. J. Wallington, P. Kenyon, and P. Hale. *Final Report: Jobs in Instructional Media Study (JIMS)* [formerly entitled *Manpower and Instructional Media: A Study of Jobs, Personnel, and Training*]. Washington: National Education Association, Division of Educational Technology, September 1971.

In addition to the task bank of 2,000 task statements, the document contains a brief overview of the project, including objectives and outcomes. The background of the project and an explanation of the structure of the final report are provided. The methodology for data gathering and analysis is given. The JIMS package itself--the result of the study--contains curriculum guidelines and task inventories for entry-, middle-, and advanced-level personnel. Recommendations for using staff and for training are included.

U.S. Department of Labor. "Career Ladders and Lattices in Home Economics and Related Areas: Possibilities for Upgrading Household Employment." 1971. [Prepared by the American Home Economics Association, Washington, D.C., under Contract No. 11-1-0406-000.]

The report describes the development of 27 career ladders based on knowledge and skill in one or more areas of home economics as well as the points on the ladders where opportunities for latticing occur. Although the schema developed for the Functional Occupational Classification Project and used in the *Dictionary of Occupational Titles* were the primary methodology used, the report also contains work descriptions phrased as FJA task statements and a paper on models for creating new jobs, by Sidney A. Fine.

1972

Appalachia Educational Laboratory. *Career Information: Guide for Exploring Careers Through Worker Traits: An Adaptation of the D.O.T. Worker Trait Groups.* Charleston, West Virginia: Appalachia Educational Laboratory, 1972.

This *Guide* "has been designed for use in the Career Decision-Making Program developed by the Appalachia Educational Laboratory (AEL). However, it has the potential for much broader use."

The principal contribution of this *Guide* has been to rephrase the entries in the *Dictionary of Occupational Titles (DOT)* to make them easier to read, understand, and use in career planning. An appendix on "How to Use the *DOT*" describes how Volumes I and II can be used to identify jobs belonging to each worker trait group and how short descriptions of each may be located in the *DOT*. Other appendixes include FJA scales as used

in the *DOT* and definitions and methods of determining physical demands, temperaments, interests, and aptitudes.

Lewis, R. E., J. A. Anderson, J. H. Christiansen, D. C. Cooper, J. E. Gilbert, K. M. Henderson, and D. C. McShane. *A Systems Approach to Manpower Utilization and Training.* Report of Social and Rehabilitation Service demonstration project 11-P-5705218-02, Utah Division of Family Services, Salt Lake City, Utah, October 1972.

The thrust of the project described in this report was the design and development of career opportunity systems both for paraprofessionals and for professional workers already in the system. Functional Job Analysis, set in a systems planning context, was the technology used. The report describes the process used to define and relate tasks to performance standards, skill requirements, and measures of complexity. It discusses orientation, discretion, and educational development. Both negative and positive experiences, and the models with which project staff operated are presented.

1973

Fine, S. A. "Functional Job Analysis." Address delivered at conference on Occupational Research and the Navy, San Diego, California, July 1973.

This address briefly describes the development of Functional Job Analysis. FJA is presented first as a job analysis technique which attempts to provide reliable and valid job information through the use of a controlled language, and second as a total system for perceiving and thinking about people at work.

----. "Functional Job Analysis: An Approach to a Technology for Manpower Planning." An illustrated seminar at the International Institute for Labour Studies, Geneva, Switzerland, February 1973.

FJA is explained as "a technology of work analysis with which it is possible to achieve statistical reliability in the definition of basic units of information." The speaker discussed the benefits which can accrue in training and certification, the development of human resources, flexibility in organizational operations, and worker mobility.

----. "Job Development for a Guaranteed Full Employment Policy--A Program Based on a Systems Approach," in David B. Orr, ed., *New Directions in Employability: Reducing Barriers to Full Employment.* New York: Praeger Publishers, 1973.

This proposal describes a program of job development for a guaranteed full employment policy that builds on the best and strongest elements in current manpower experience. It also discusses some common assumptions which need to be reexamined in order to make job development for full employment practicable and affirms the American belief in work and equal opportunity for all as a basis for helping America pull together.

----. "Making Systems Work: Some Necessary Conditions." Keynote address delivered to the Utah Research Utilization Conference at Snowbird, Utah, October 1973.

Seven issues that affect success in managing systems were discussed: (1) the source of the decisions to use the systems approach; (2) the perception of the larger systems context; (3) the importance of the subsystem; (4) feedback as a signal for action; (5) whether the system is a machine; (6) commitment with a difference; and (7) introducing a systems approach to manpower planning in organizations. The address emphasized the need for FJA and systems-based examples of administrative programs, training programs and curricula, career opportunity systems, performance standards--particularly numerical standards--and their implementation, pay and merit systems, and the application of the National Task Bank to the design of work and its flow.

Fine, S. A., and F. D. Bernotavicz. *Task Analysis: How To Use the National Task Bank.* Washington, D.C. office: W. E. Upjohn Institute for Employment Research, November 1973.

This publication is a multimedia training package with filmstrips, cassettes, scriptbook, trainer's manual, wall charts, and participants' materials for a five-day seminar workshop on Functional Job Analysis. The course is designed to provide a way of seeing manpower problems in a systems context; to develop skill and local capability in task analysis; to relate task analysis to local manpower planning and utilization problems; and to provide experience in using the National Task Bank as a resource.

Fine, S. A., et al. "Work and Nonwork: Merging Human and Societal Needs," Chapter 6 in M. D. Dunnette, *Work and Nonwork in the Year 2001.* Monterey, California: Brooks/Cole Publishing Co., 1973.

These authors present the need for the development of a human resource industry with a dual purpose: to improve the quality of the environment and to improve the quality of life for the individual worker. It stresses the importance of adaptation and accommodation between workers and the work organization. Two efforts to develop new jobs and careers are examined. Three kinds of skills are identified: Functional, Specific Content, and Adaptive, which must be considered by manpower training and development programs. An addendum, New Approaches for New Careers--Strategic and Technical Considerations, is included.

General Electric Co., Career Planning and Organization Development Operation, Corporate Education Services. *Career Action Planning: A Career Development Program That Will Help You Determine Your Next Career Step and Understand How to Accomplish It.* Ossining, N. Y.: General Electric Co., 1973.

This workbook was developed to help an individual evaluate himself and determine his career potential. Career Action Planning draws on FJA, and is the result of a continuing project initiated by General Electric in 1969.

Golmeih, M. S. "Similarity between Supervisor-Subordinate Job Role Perceptions as a Determinant of Subordinate Job Performance." Dissertation submitted to the faculty of the Graduate School of Arts and Sciences, The George Washington University, in partial satisfaction of the requirements for the degree of Doctor of Philosophy, July 3, 1973.

Case workers in a welfare agency used Functional Job Analysis self-reports as a means for expressing their perceptions of their specific job functions and for testing three hypotheses concerning the relationship of job performance and job perceptions.

Henderson, K., and R. E. Lewis. "Using FJA in Social Service Supervision." Unpublished manual, Utah State Division of Family Services, May 1973.

This manual is an outgrowth of a training course, "Using FJA in Social Service Supervision," offered to Utah State Division of Family Services supervisors and administrators by the authors. It provides sufficient acquaintance with a Task Bank and the information which can be retrieved from it to enable a nontechnician to use it in day-to-day supervision and management.

Lesh, S., B. A. Gill, and J. Dunn. *Demonstration Project on Developing Alternative Qualifications and Credentials for Paraprofessionals.* December 1973. [Final Report: Phase II, National Committee on Employment of Youth of the National Child Labor Committee, prepared for the Manpower Administration, U.S. Department of Labor, under research and development Contract No. 82-34-70-29.]

This demonstration project sought to develop new options for upgrading workers in four occupations: addiction services, child development, occupational therapy, and teaching. The major thrusts were to make credentials more relevant to job duties; to give greater credit for work and life experience; to foster mobility among human service occupations; and to enable paraprofessionals to obtain education and training while fully employed. Functional Job Analysis was one of the sources for the development of the task analysis methodology used in the project.

McSweeney, J. P. "Task Complexity as a Basis for Designing Career Ladders for School Aides." Submitted in partial fulfillment of the requirements for the Degree of Doctor of Education at Teachers College, Columbia University, 1973.

This study is an attempt to organize the work expected of school paraprofessionals into levels of service corresponding to levels of work complexity and to organize their jobs into comparable levels or career ladders. The methodology of job anlaysis which was used as the basic strategy for the development of five service categories according to levels of functioning is partly based on FJA Worker Function Scales.

Robinson, P. G., ed. *Curriculum Planning for Undergraduate Training in Gerontology.* Washington, D.C.: Federal City College, Institute of Gerontology, June 1973.

The goal of the project covered by this report was to develop curriculum on aging for Federal City College undergraduate students, interested community persons, and workers employed in services to the elderly. The report includes a description of the use of FJA in developing task analyses leading to curriculum plans, and presents a task bank of personal-care home tasks.

Roter, B. *An Integrated Framework for Personnel Utilization and Management.* New York: Chase Manhattan Bank, N.A., 1973.

This paper describes the efforts of the Chase Manhattan Bank, N.A., to establish an integrated framework for personnel utilization and management designed to improve operation, coordination, and communication among the various components of the organization. The paper describes FJA in detail, methods of gathering task data, and how the data can be stored in a computer-based information source.

Smith, A. D. *Generic Skills for Occupational Training.* Saskatoon, Saskatchewan, Canada: Saskatchewan New Start for the Training Research and Development Station, 1973.

This document attempts to define generic skills (e.g., reasoning, mathematics, and language skills) required by different occupations. The report includes the FJA taxonomy of data skills, which was used to develop data-collection instruments for gathering data on 27 occupations in four geographical areas. The data-collection instruments, the results, analysis of the data, and curriculum development specifications derived from the analysis are also included.

State of Oregon. *Klamath CSD Snapshot Study,* by James Burri. Salem, Oregon: Public Welfare Division, July 1973.

The purpose of this study was to test the overall methodology of systems and task analysis using FJA and to provide the Klamath (Oregon) Children's Services Division, as well as the Public Service Careers Program of the state, with data that could be utilized for program and manpower planning. The study consists of statements of purpose, goals, and objectives and a compilation of workflow charts and task statements. Revised objectives and a time study for achievement of the objectives are included.

U.S. Civil Service Commission, Bureau of Intergovernmental Personnel Programs. *Job Analysis: Developing and Documenting Data,* BIPP 152-35. Washington: December 1973.

This publication provides guidance in developing job information through job analysis for use by state and local governments. It is written primarily for personnel who have some familiarity with job analysis, but it provides useful information for others, particularly if it is supplemented by classroom training.

U.S. Civil Service Commission, Bureau of Intergovernmental Personnel Programs. *Job Analysis: Key to Better Management.* Washington: Government Printing Office, September 1973.

This pamphlet presents a brief overview of job analysis as a management tool, particularly in government offices. It explains through FJA language the uses of job analysis in understanding what makes up a job, the responsibilities of a worker, and what the worker needs to do the job.

U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service. *National Task Bank* and *Editing Manual for Use with National Task Bank*, first edition, April 1973. Prepared by the W. E. Upjohn Institute for Employment Research, under Contract SRS 72-25. Available from ERIC Document Reproduction Services, P.O. Box 190, Arlington, Virginia 22210. Catalog Nos. ED-078224 and ED-078226, respectively.

The *National Task Bank* consists of 547 tasks in social welfare and rehabilitation services, administration, and money payments. The tasks are analyzed according to the principles and technique of Functional Job Analysis (FJA) and are arranged in 13 categories.

The accompanying *Editing Manual* is an attempt at definitive, illustrative guidelines for editing tasks written according to the principles and techniques of FJA. It is intended for use by persons trained and competent in FJA task analysis and not as introductory material.

U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service. *Task Analysis and Job Design for Public Assistance Agencies, as Illustrated by Eligibility Determination*, SRS 73-21204. Washington: January 1973.

This document was developed to illustrate the procedures involved in applying Functional Job Analysis (FJA) to manpower planning in the assistance payment processes of public assistance agencies. It focuses on the systems analysis approach as applied to determination of purpose, goals, and objectives; delineation techniques for tasks carried out in relation to eligibility determination; and clustering and organizing tasks into jobs.

1974

Fine, S. A. "Counseling Skills: A Target for Tomorrow," *Vocational Guidance Quarterly*, 60th Anniversary Issue (June 1974).

Counselor skills are reexamined in the light of vocational counseling objectives and the nature of human performance. It is critical for future effectiveness that counselors reconsider their skills in an educational, rather than therapeutic, context.

Fine, S. A., A. M. Holt, and M. F. Hutchinson. *Functional Job Analysis: How To Standardize Task Statements*. Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, October 1974.

This manual gives definitive, illustrative guidelines for standardizing task statements. It is intended for use by persons trained and competent in FJA task analysis. Part I briefly reviews some of the concepts and assumptions which are involved in the formulation of task statements and outlines a procedure for achieving their standardization through a group editing process. Part II presents and explains eight questions which are asked about each task to test its validity and reliability.

Gill, B. A., S. Hoberman, and B. Persky. *Developing and Testing Procedures and Instruments for the Assessment of the Competencies of Candidates for the Child Development Associate Credential*. May 1974. [Final Report,

National Committee on Employment of Youth, N.Y., under Contract No. FY74 SC003 with the Child Development Associate Consortium.]

Critical tasks were identified as being predictive of a worker's ability as a child development associate in 11 functional areas. The methodology used to define the tasks was based primarily on Functional Job Analysis. Criteria and standards were defined, and weights were established to convert assessments of performance on tasks to functional areas. Data-gathering procedures were developed as well as a manual and training program for observers. While the instrument developed is usable, the report recommended further modification, a field test, and validation.

Lewis, R. E., R. P. Brady, and W. Pearson. "A Beginning Task Bank for Rural Comprehensive Human Services Delivery System." Unpublished report prepared for Services Integration Project, Office of Planning and Research, Utah Department of Social Services, January 1974.

This paper contains a description of the process and preliminary results of an FJA task analysis project with two major thrusts: (1) to demonstrate an integrated service delivery system, comprised of the whole range of human services, for a particular locale; and (2) to develop services under the auspices of a new governmental form--a regional association of governments. This project was an attempt to decentralize an activity of state government and to strengthen the ability of local government to plan and administer programs to meet particular local needs.

Morgan, T. "The Occupational Studies Programme of the Air Transport and Travel Industry Training Board," *Training Research Bulletin,* Vol. 5, No. 2 (March 1974).

This paper describes the plans for a long-term research project of the Occupational Studies Programme to be conducted by the Air Transport and Travel Industry Training Board. The project draws upon the research of E. J. McCormick, R. E. Christal, E. A. Fleishman, and S. A. Fine. The research includes: Phase 1, conducting a survey to determine what companies do about job analysis; Phase 2, establishing the foundations for a standardized approach in describing the task content of jobs and in developing a task bank for selected areas of work in the industry; Phase 3, collecting information about the ways in which tasks are actually combined into jobs in the industry; and Phase 4, testing approaches in describing jobs in alternative terms which will make possible the identification of broad underlying similarities between jobs.

National Center for Housing Management, Inc. "Equal Opportunity Examination of Real Estate Brokers and Salespeople." Prepared for the U.S. Department of Housing and Urban Development under Contract No. H-2215R, 1974.

In a study to determine whether real estate licensing examinations in all 50 states and the District of Columbia were (1) job relevant, (2) culturally or racially biased, and (3) adequately covered the subjects of fair housing and equal employment opportunity, a Functional Job Analysis (FJA) self-report was used to gather data from practitioners in the field. A

number of findings are enumerated, including the fact that two tests were found to be job relevant and one not so, and that none of the tests evaluated was developed on the basis of job analysis data.

National Center for Housing Management, Inc. "Final Report on Task 3 Model Performance Standards for Credentialing of Housing Managers and Management Firms." Prepared for U.S. Department of Housing and Urban Development under Contract No. H-216R, 1974.

A group of on-site managers and managing agents completed a Functional Job Analysis self-report that was developed for this project. From the self-report data, Functional Job Analysis job descriptions and sample tasks were developed; and model functional abilities and knowledges which would be required were identified. Job descriptions were then included in model legislation for licensing of on-site managers and managing agents of multifamily rental housing.

Wilson, M. *Job Analysis for Human Resources Management: A Review of Selected Research and Development.* Washington, D.C.: Manpower Management Institute, January 1974.

The purposes of this review were to summarize the various job analysis techniques which have been developed, to discuss their application in selected human resource management activities, and to suggest priorities for further research and developmental work. The methodologies were those of (1) the U.S. Department of Labor, (2) Functional Job Analysis (Fine), (3) the Health Services Mobility Study (Kilpatrick), and (4) the Position Analysis Questionnaire (McCormick).

FORTHCOMING STUDIES

1975

Baxter, Brent. "Validation of Basic Occupational Literacy Test." Prepared for U.S. Department of Labor by American Institutes for Research under Contract No. 20-42-74-14.

In this study, Functional Job Analysis is used to discover and design tasks to serve as criteria for basic work functions such as *comparing*, *compiling*, and *computing*. Performance in these functional work situations was correlated with performance on the Basic Occupational Literacy Test (BOLT).

National Planning Association, Bureau of Social Science Research, and American Institutes for Research. "A Nationwide Survey of Law Enforcement Criminal Justice Personnel Needs and Resources." Prepared for the U.S. Department of Justice, Law Enforcement Assistance Administration, under Contract No. J-LEAA-035074.

This study in progress involves an integration of job analysis information for representative jobs in the police, courts, and corrections areas in order to provide a base for generating skill, knowledge, and ability requirements. This was done using the Functional Job Analysis methodology.